

Hunger Mountain

A steward's view of the mountain ecosystem

How changes in
Elevation affect biotic
And abiotic things

Appreciation for
the nature
around us

Maps and data
graphs

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Appreciation For Nature

“The best view comes after the hardest climb”–Unknown Author

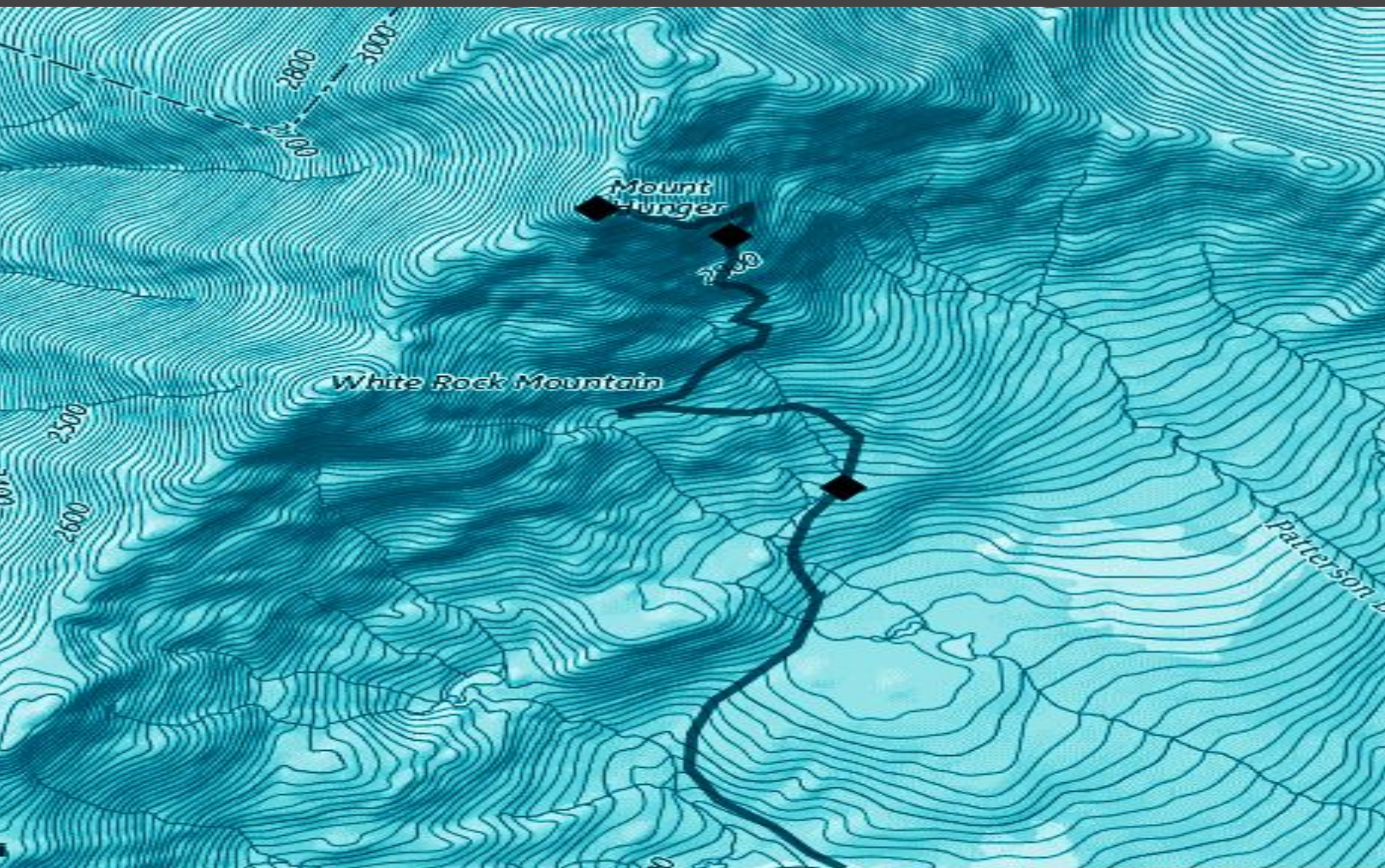
When you hike a mountain what is your goal?

Appreciation is a very important part of hiking. If you do not appreciate it then you might throw trash off the side of the mountain and leave it there or you might disrespect the mountain in some way. So now you know why appreciation for nature is very important.

Visualizing The Landscape

This is a map of hunger mountain. The diamonds are the data collection sites.

The first data site we stopped at, the elevation was 2153. The second elevation was 3059. The summit was 3538. This map is a topo map. It shows the elevation in feet. The way you read this map is by using the contour lines. When the lines get really close that means that it is is very steep, but when the lines are kind of spread out and it's not that steep.



Where to visit, What to avoid, and Stewardship

It's pretty obvious that you should not go off the trail, but this is especially important up at higher elevations. This starts being important, especially at Elevation 2, (see on page 3), because some foliage hides these secret drops.



While you're on the mountain, you want to be sure to take care of your surroundings. This is called Stewardship. Some easy things to do are:

- Don't pull or hang on trees

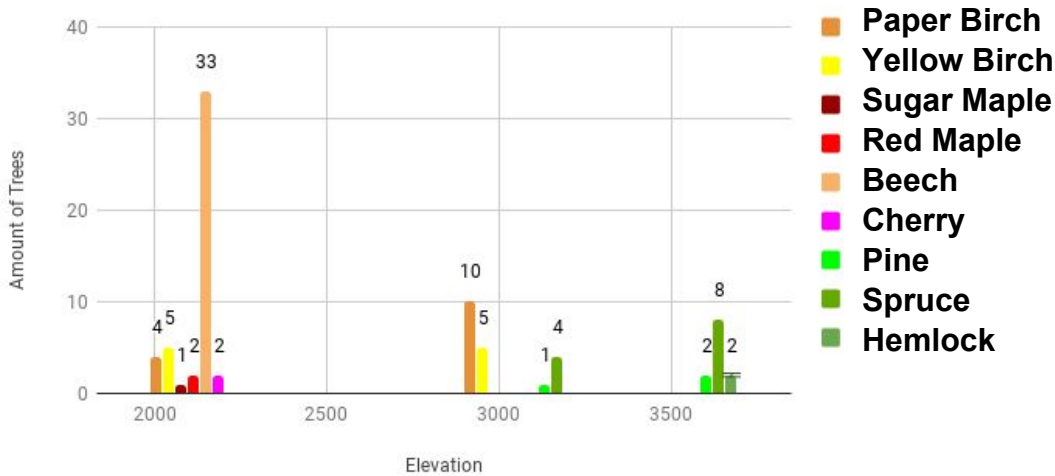
- Stay on the trail to not trample wildlife

- Don't leave trash, bottles, or anything on the mountain

- Don't interact with any animals you find.

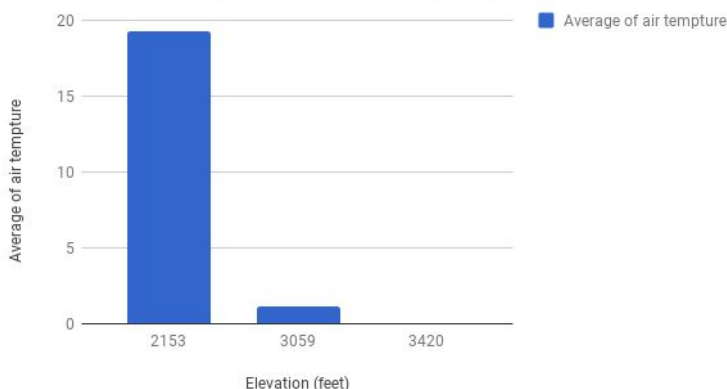
Data from Hunger Mountain

Trees at Each Elevation

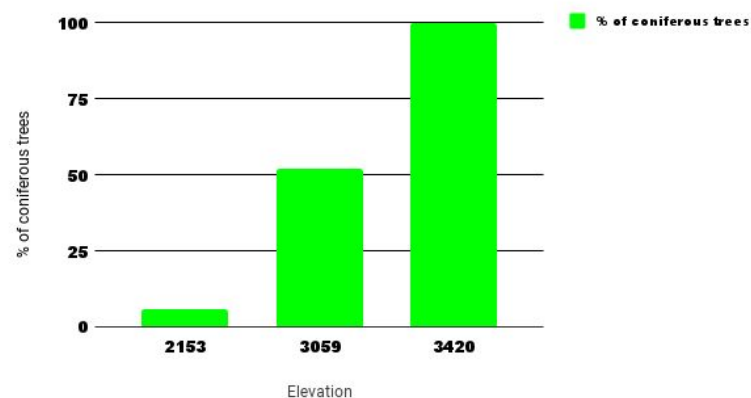


Something that we noticed from this data, is that there are less species of trees higher. There are also more coniferous trees up higher. Some conifers are Pine, Spruce, and Hemlock. The others are deciduous.

Average of air temperture vs. Elevation (feet)



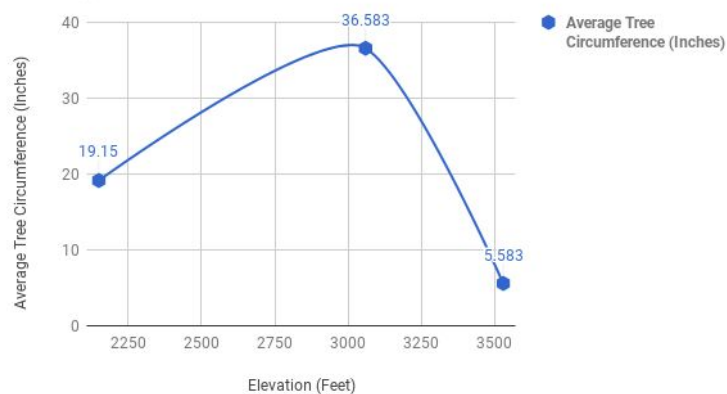
% of coniferous trees vs. Elevation



The air temp at elevation #1 was higher than the rest of the elevations. We didn't have time to check the air temp at the top.

This graph shows that the tree's circumference is largest at the middle elevation. The three points of data form an arch.

Average Tree Circumference at each Elevation



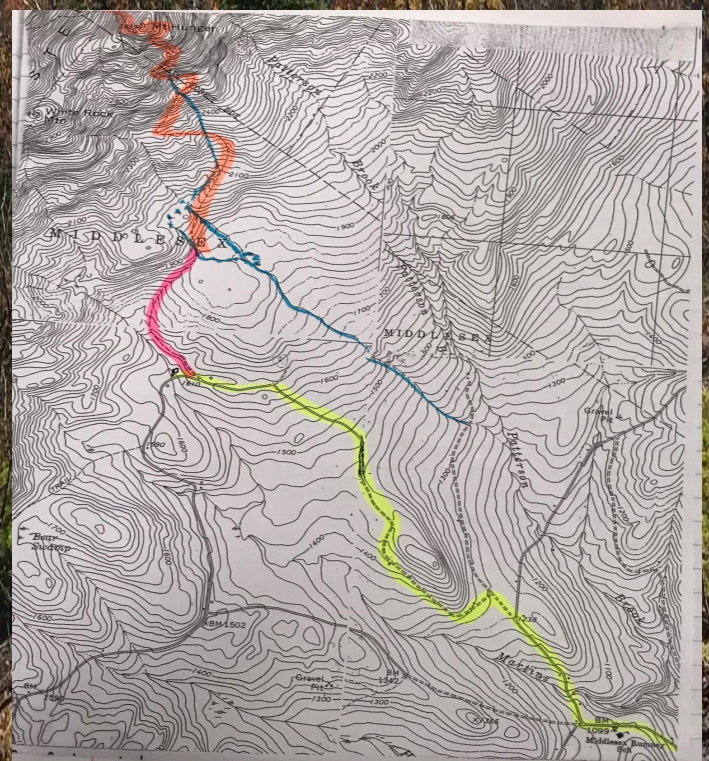
There was way more coniferous trees at the top of the mountain than at the bottom because the top of the mountain is cooler and deciduous trees can't really live in cool temp because it will lose all their leaves.

Where and what to avoid

Places that are good to visit is the top there is a beautiful view of the the land below. At elevation 3 (3059 ft) there is a split between trails where there is a big rock where you could eat lunch at. Places we want you to avoid is to not go on the grass or stepping on plants. Also try to stay near the tree line so if you slip you could grab a tree.

How to be a Steward of the land.

- Pick up your trash before you leave that area
- Walk on the rocks as much as possible
- Don't throw leftover food into the woods even though it's compostable
- Don't break tree branches or peel off bark
- Don't disturb the wildlife



Nature Appreciation

I stood up and walked over to what I thought was my pencil sharpener but when I bent down to pick it up it was a flower unlike one I had ever seen. It shone as bright as the moon and it looked as though it was made from the moon rock itself, it had the crater dents and everything. I felt the petals, “ weird “ I thought out loud the petals not only looked rough but they were. And it wasn't like they were a little scratchy or something, it was *really* rough like a rock. I picked the flower, It felt like it weighed a million pounds and as soon as I put it in my pocket I felt hatred for everybody and everything. I knew I wasn't going to get over this in a day or two. It felt good. I felt powerful. I wanted *war*.

To read the rest of [The Impact of a Flower](#) by Jasmine Gruen [click this link](#).

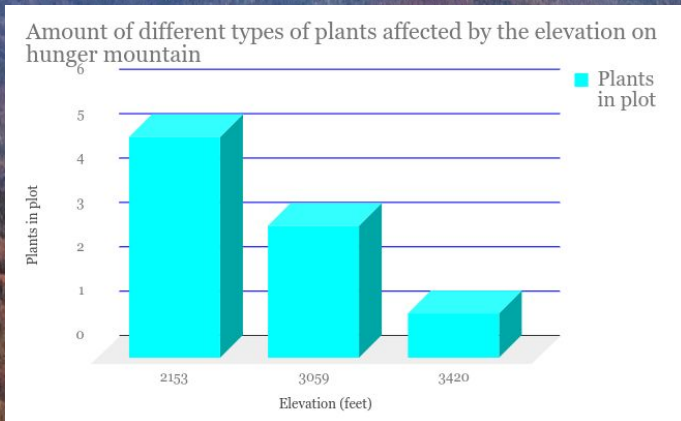


The view from the top of the mountain is spectacular. The faint mountains in the distance looked like the rolling sea on a stormy day. I sit here just staring, I never want to leave.



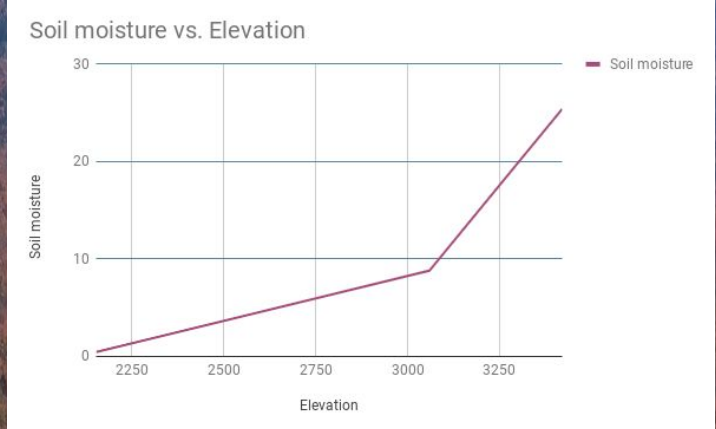
Elevation studies (data and conclusions)

Amount of different types of plants



This data was taken at three different elevation on Mount Hunger: 2153 ft, 3059 ft and 3420 ft. As you can see on the graph, when the elevation increased, the plant diversity decreased. This graph was made to help show that as you walk up the mountain you will see less plant diversity.

Soil moisture



This data was taken at three different elevation on Mount Hunger: 2153 ft, 3059 ft and 3420 ft. As you can see on the graph, when the elevation increased, soil moisture also increased. This means that the higher you hike the wetter the soil becomes.

Stewardship

Stewardship is a very important responsibility. When you go outside or on a hike, it's your job to protect the land. Parts of stewardship are not leaving trash behind, taking care of the land, and leaving natural things behind like rocks, sticks, and animal bones. You should always pick up all the trash you see. While hiking up the mountain be careful, so as to not disturb the environment. You can be a steward of the land by cleaning up after yourself and not trampling plants. What you bring up the mountain should also come back down the mountain with you.



Danger to the Plants

Below is an image of one of the tiny trees that grow on in alpine zones, like Mt. Hunger's summit. But these trees are fragile. It is very hard to grow where conditions are colder and more acidic.



This is only one of the fragile plants on Mt. Hunger. **If we trample or rip these few plants, these ecosystems will disappear.** Here are some things to keep in mind:

- Don't touch any plants at the summit.
- Watch where you step. Keep on the rock, not the grass, whenever possible.
- Keep everything the way it was before you were there.

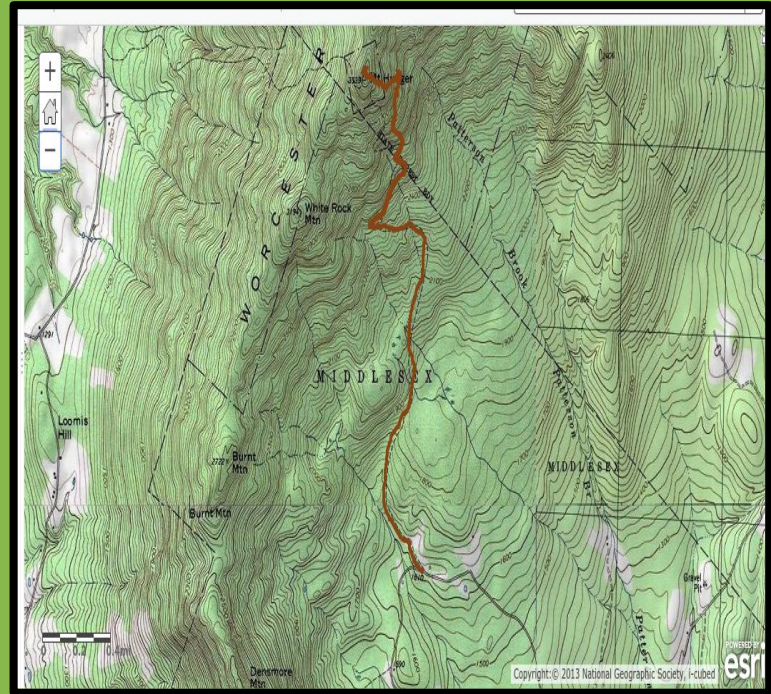
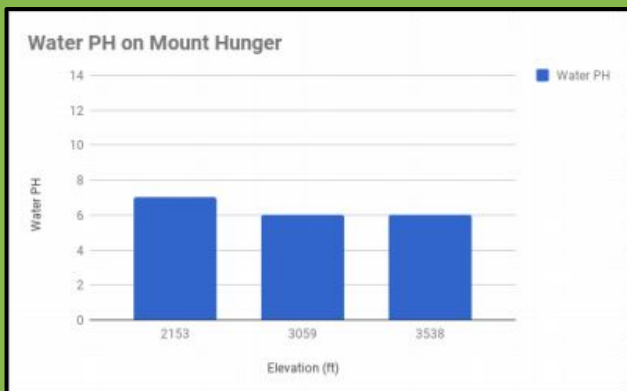
Data and Landscape

Mt. Hunger's Trees

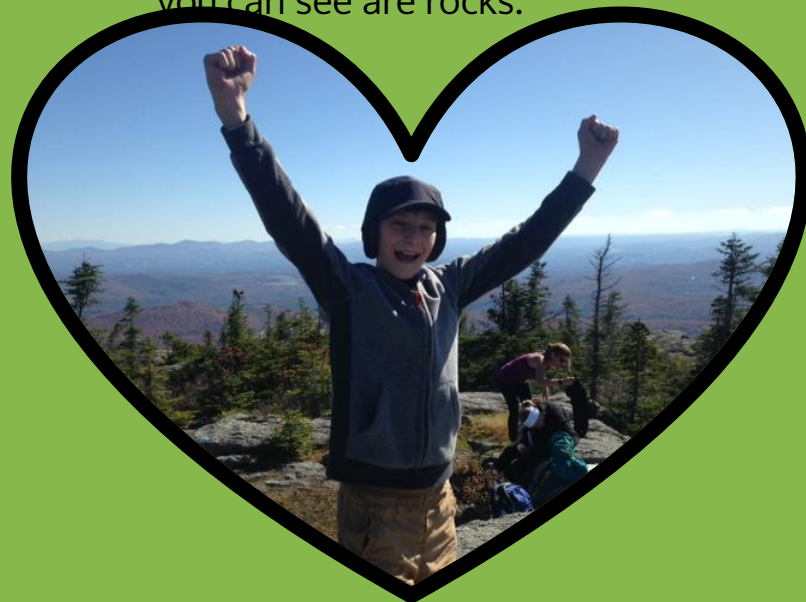
On Hunger Mountain, we collected data about types of trees we found there. Here is our graph:



As you go up the mountain, you will notice that the only remaining trees are conifers-- trees with cones (like pinecones) and needles. But there aren't very many trees. Why? Well, all plants need water. **And the answer is in the water's pH-- the acidity of the water.** A lower pH means more acid. Too much acid will kill plants and animals. The graph below shows pH. As you can see, there is more acid at the higher elevations, which means fewer plants.



Above is the route we took up the mountain, on the Middlesex side. This hike is flat in some parts, and steep in other parts. At the top all you can see are rocks.



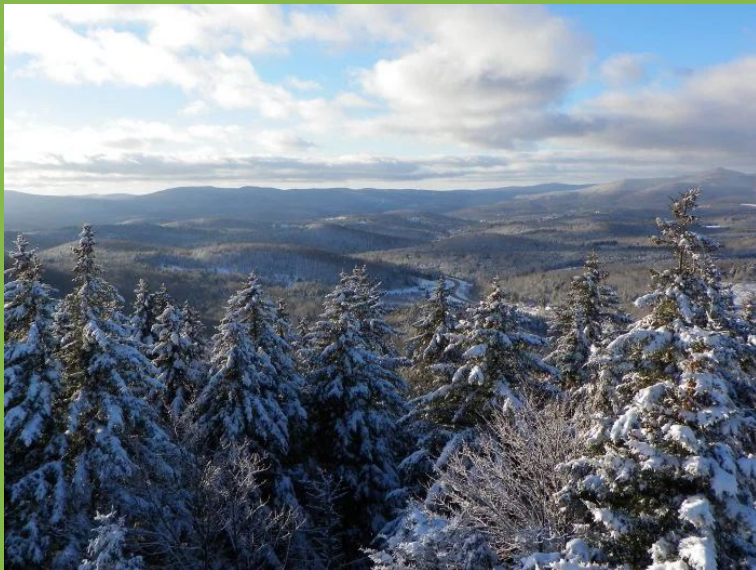
Me at the awesome top!
The view up there is really gorgeous! I recommend that you bring a camera.

Flora Of Mount Hunger

Standing at 3540 ft , Mount Hunger isn't the tallest mountain in Vermont but it sure is an impressive one.



Mount Hunger has an spectacular view, especially in fall, because you can see all the trees changing color and it looks amazing! The trees are quite nice to look at . For example, the spruce trees which droop down and add a really weird but cool effect to the surroundings making it feel mysterious.



There are many different types of plants on mount Hunger. Here some that you may encounter:



You probably shouldn't eat the berries

American Mountain Ash (Sorbus americana)

Some of the plants located at the summit of the mountain are special plants that only grow at the tops of mountains.



The grass in this picture is fragile and only grows on the top of mountains. while walking around at the summit try to not step on the grass. At the summit there are only coniferous trees. **While on your hike, take the time to look around and appreciate your surroundings.**

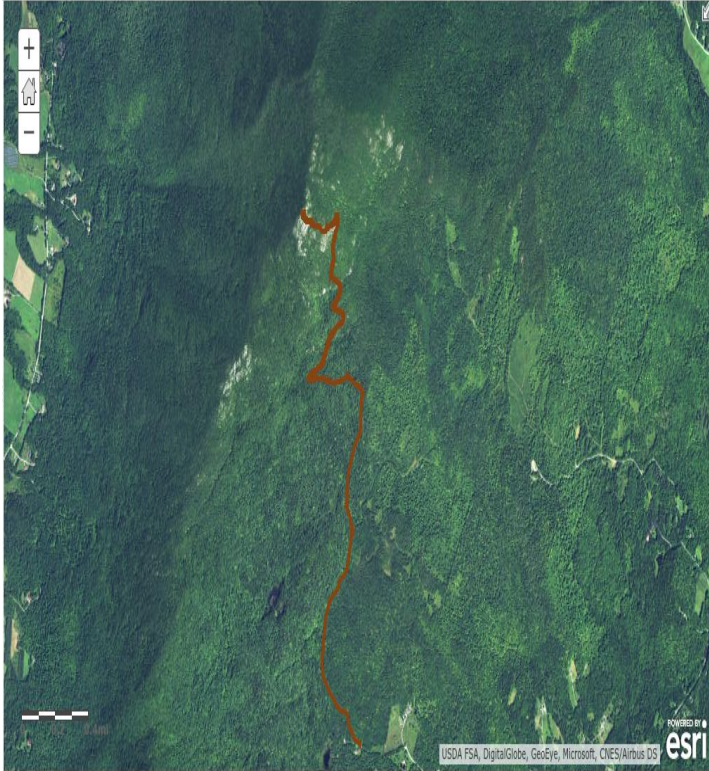
Mountain ash https://www.best4hedging.co.uk/images/mountain-ash-tree-aka-rowan-tree-p123-2546_zoom.jpg

Snowy trees http://cdn.onlyinyourstate.com/wp-content/uploads/2016/10/11759175104_49b88c89c5_k-700x525.jpg

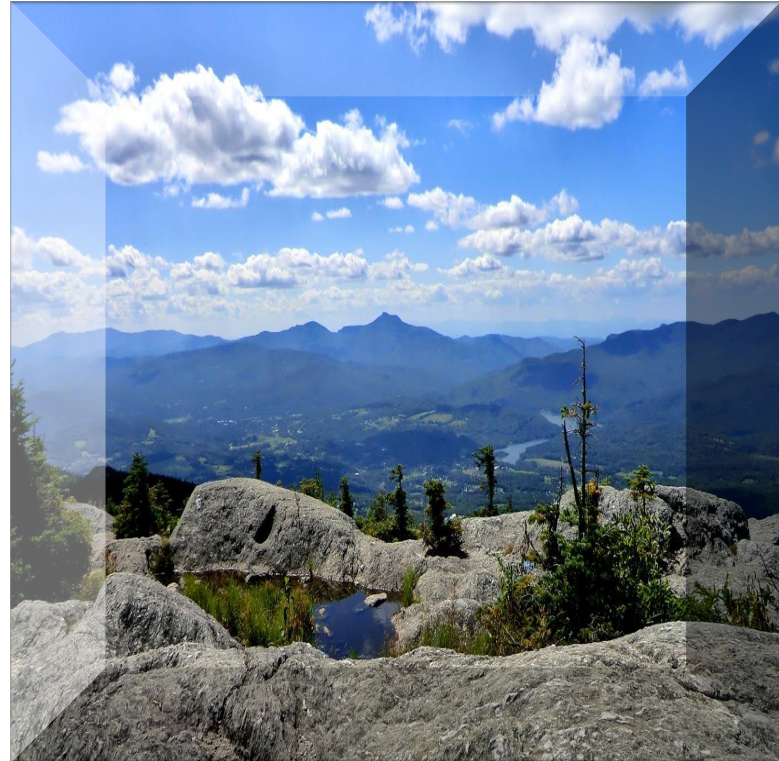
Maps And Pics

Hunger Mountain is located in Middlesex, Vermont. Right by Rumney Memorial school.

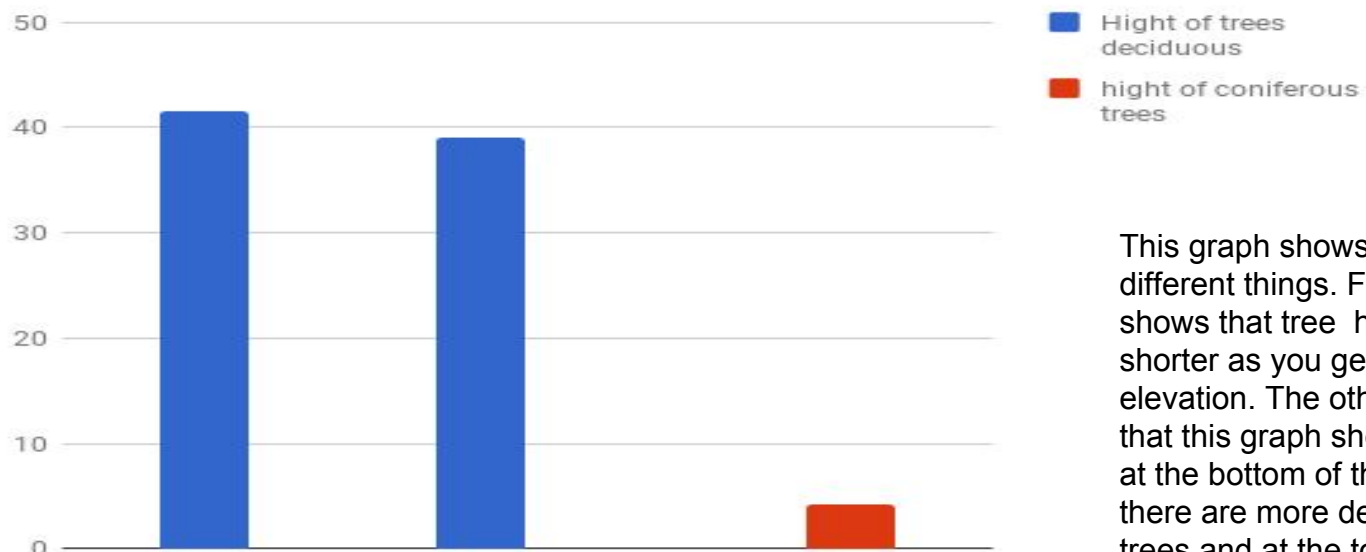
In fall, there is heavy foliage in Vermont. When you get to the top of Hunger, it's amazing!



This is a map of the mighty Hunger Mountain that shows the trail that you hike, to the top of the mountain.



This is the summit of Hunger Mountain.



This graph shows two different things. First, it shows that tree height gets shorter as you get higher in elevation. The other thing that this graph shows it that at the bottom of the mountain there are more deciduous trees and at the top there are more coniferous trees.

Data graphs

These graphs show different data from experiments conducted on Hunger Mountain

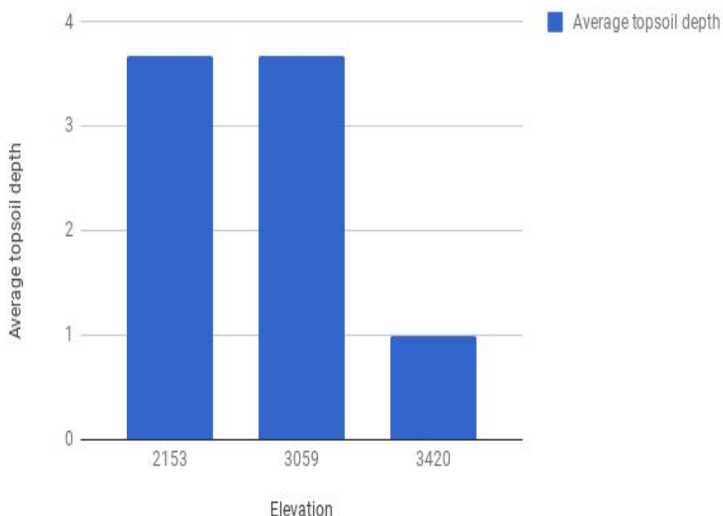


Both of the graphs below show two of the experiments our team conducted. The first was of topsoil depth, measuring how deep the topsoil was and the second was the temperature of the soil

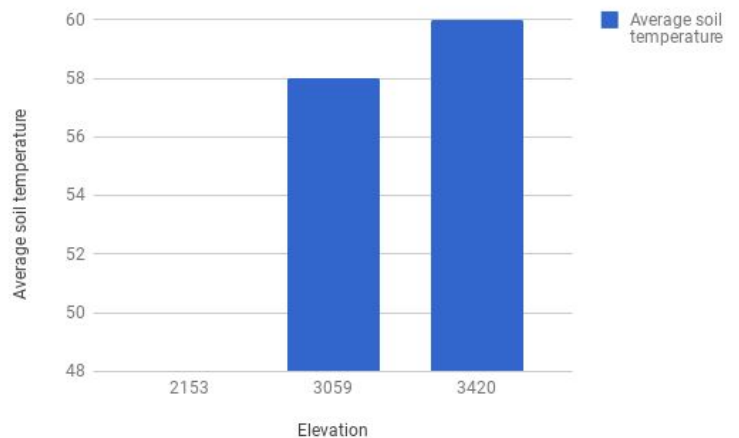
This graph shows that the higher you get up the mountain the soil depth decreases.

This chart is showing the temperature of the soil as the elevation increases.

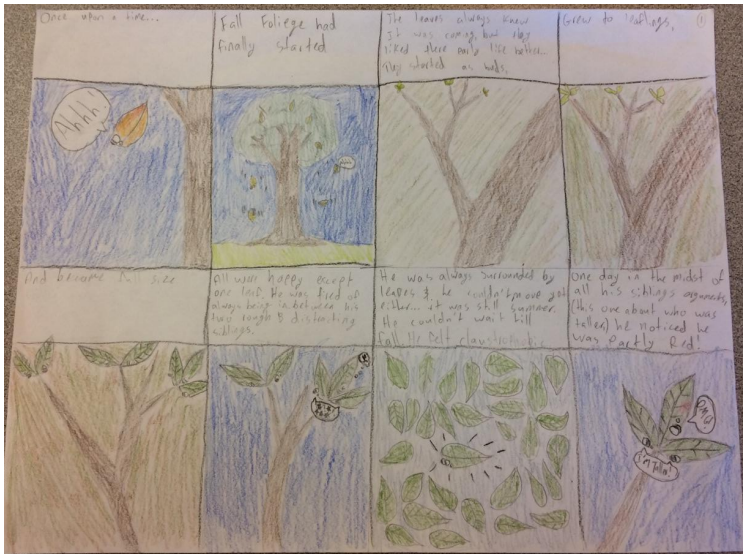
Average topsoil depth vs. Elevation



Average soil temperature vs. Elevation



Stewardship and Appreciation Art



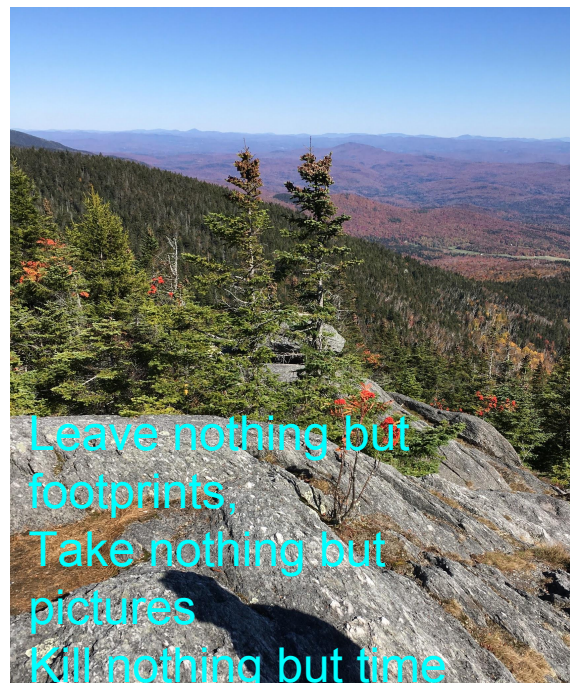
Artist - Maya Elliott

As he finished mowing the football field, his mower hit something in the grass. He hopped down off the mower. As he looked under the mower he saw something that look like a red snake. He reached under to pull it out of the blade. The thing in the blade started to move so he flung it across the lawn . Then like something out of sci fi the snake started to grow and get bigger. Then the light was so bright that Larry covered his eyes and ran away, When he thought he was far enough away, he looked back at his mower and saw that the snake had turned into a zombie and it was duplicating itself many times. There were 6 that he could see, all of them touching the lawn mower. Every time they did, each one cloned themselves. Now there were 12, now 18. As he stood outside of Crises classroom he knew what he needed to do.

To read more of this story click
here -[Story](#)

Stewardship

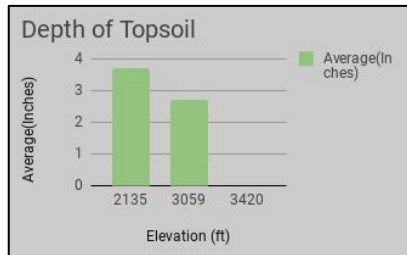
Stewardship of nature means to respect nature and to take care of it.



By
Benjamin Bourgeois

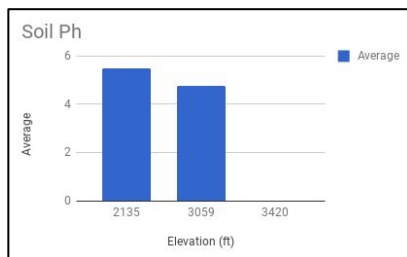
Data and Graphs

Depth of topsoil graph:



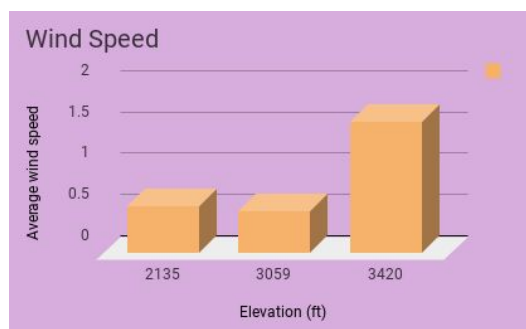
The depth of the topsoil, as you can see on the graph, gets shorter as you climb up in elevation. This goes to show that the ground gets harder as you climb the mountain.

Soil PH graph:



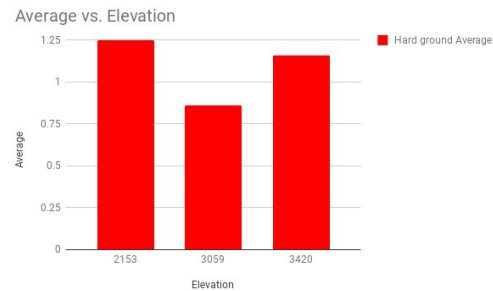
This graph shows what the soil Ph at different elevations is. This means that the higher you climb in elevation the more acidic the soil gets. The plant population could change from the acidity of the soil, meaning the Ph.

Wind Speed graph:

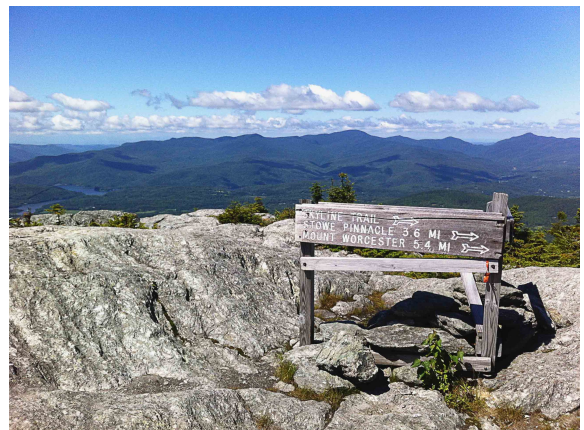


This graph shows that at the lower elevation on the mountain, the wind speed was pretty fast, but then as you climb higher the wind starts to slow down. At the very top of the mountain, the wind gets really fast.

Hardness of the Ground Graph:



As you can see on the graph, it shows that on elevation one, the soil is more moist. And as you go to elevation 2, it gets less moist, but then gets more moist at elevation 3. The moisture affects the hardness of the ground because the more moist the soil is the softer and more squishy the soil is.



The Landscape of Hunger MT.



This is a map of Hunger Mountain. The highlighted trail, (in red), is the hiking trail. Consider this map when you go hiking because it shows the elevation of the different parts of the Mountain. By this I mean it shows how steep different parts of the mountain are, so you can plan how steep your hike is going to be.

The leaves look colored
The trees look like a rainbow
Making leaf piles

Apples start growing
They smell sweet and delicious
Deer like to eat them



The top of MT Hunger is a very cold, windy, and rocky mountain. You have to be very careful because some wet leaves on a rock can cause a very bad fall. Although the hike up can be scary at times, it is so worth it at the top.

Animals prepare for winter
And that feeling of cold snow
There will be foot prints

Where to Visit, What to Avoid & Stewardship

Where To Visit & What To Avoid

When you're on a mountain, there is a few places you should steer clear of, Below there is a list of things you shouldn't do, and places you shouldn't go:

- Do not go off the trail unless you have to go to the bathroom, but make sure you take your trash with you.
- Go slow, and be careful. At some parts of the trail it can get dangerous.

There are so many plants and animals that are endangered, and even if they are not endangered, we still want to take care of them.

Taking Care of The Nature

I know peeling the bark off of a beautiful Birch Tree can be fun, but it is not fun for the trees. Peeling the bark off of a Birch Tree can kill the tree. So next time you think about peeling the satisfying bark off of a Birch Tree think twice.

Image credits:

<https://media1.fdncms.com/sevendaysvt/imager/u/original/2856200/hiking1-3-9331ad61726bd5a4.jpg>

<https://cdn-assets.alltrails.com/static-map/production/at-map/13276698/trail-us-vermont-mount-hunger-waterbury-trail-at-map-13276698-1504458845-300x250-1.png>

Stewardship

To be a steward, all you have to do is observe, be helpful, and take care of the animals and plants around you on the mountain. Below there is a list of ways to be a steward:

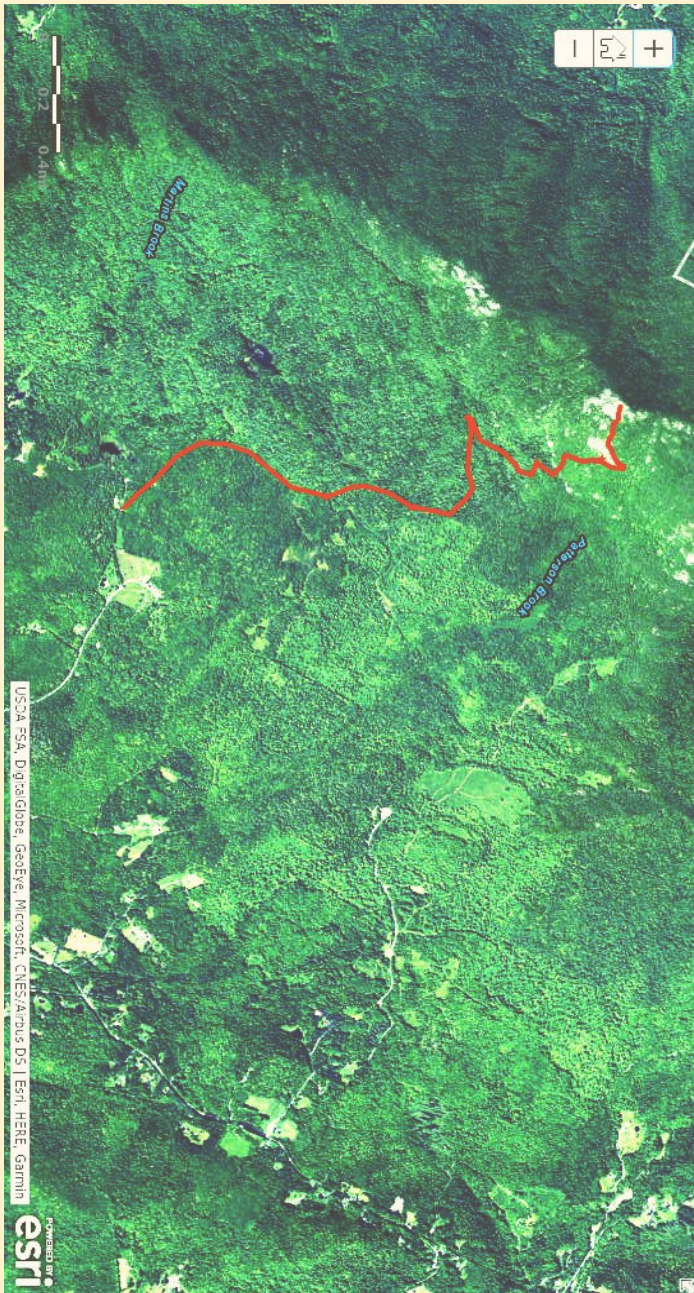
- Pick up trash
- Take care of nature
- Respect wildlife
- Silence your phone
- Whatever you bring in you bring out
- Respect nature: Including plants and trees

If you observe a lot you will start to notice the different types of trees. Below there is a list of different types of trees:

- Birch
- Spruce
- Fir
- Beech
- Cherry
- Maple
- Sugar maple
- Red maple

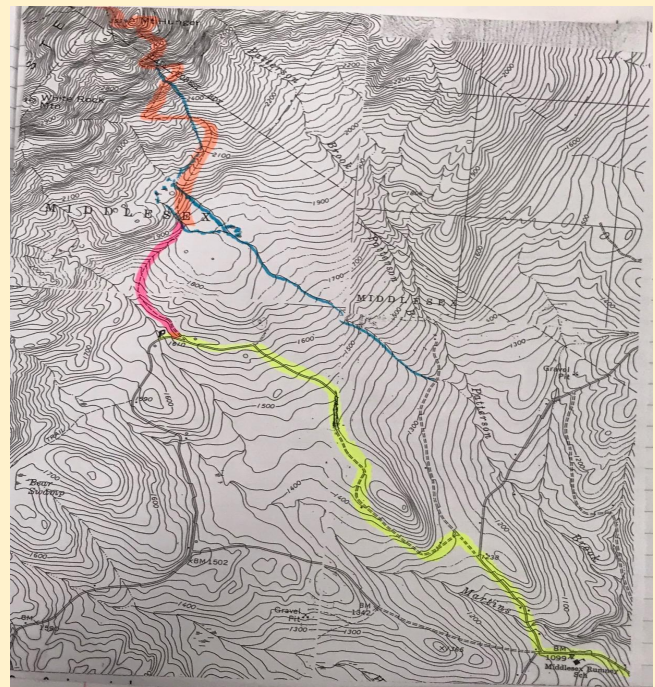
These are most of the trees you can find on Mount Hunger And many more. As you can see observing is part of being a steward and if you observe you'll notice a lot of cool things in nature.

Map of Hunger Mountain and the trail we hiked. It is important to stay on the trails for the safety of our mountains.



Map of the elevation on Mount. Hunger and the trail we hiked.

As the elevation gets higher, the lines get closer together. Each line shows an increase in elevation. The highlighted areas are the trails, rivers, and roads on Mount. Hunger. The blue is the river, where the yellow stops and where the pinks starts is where the parking lot is, the pink is the road / trail, the orange is the trail, and the yellow is the road. The lines are called contour lines

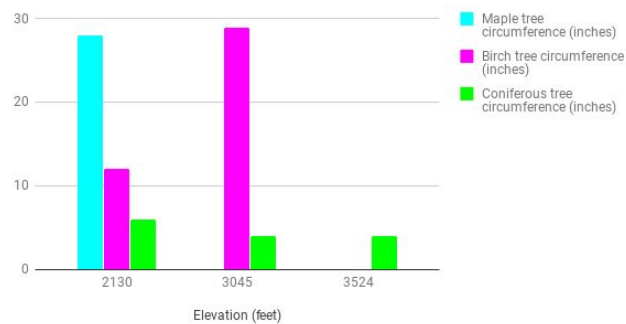


Our class at the summit 10/12/17.



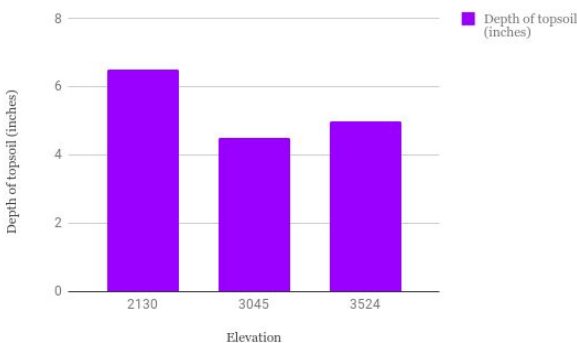
How Elevation Affects the Environment and How we Can Help It

How elevation affects the circumference of maple, birch, and coniferous trees



This graph shows how elevation can affect the circumference of trees. I think that as you go higher, coniferous trees get smaller. At elevation 1, the coniferous tree was 6 inches, and at elevations 2 and 3 the coniferous tree was 4 inches.

How the elevation affects the depth of topsoil



This graph shows how the elevation can affect the depth of topsoil, which can affect the types of things that grow. The topsoil is deeper at the bottom of the mountain than the top. Maybe that is because the bottom of the mountain has more trees and plants that settle on the ground and decompose. The average depth of topsoil at elevation 1 was 6.5 centimeters, and the average depth of topsoil at elevations 2 and 3 were 4.5 centimeters and 5 centimeters.

On Mount Hunger some plants on the summit are endangered. There are many threats to the summit of the mountain. We need to be careful and not step on anything but the rocks on the summit. The small trees on the summit are called krummholz. The coniferous trees grow very slowly, so they never really reach their full size. Please be careful and do not hurt the fragile plants on the summit of the mountain. Some plants take a really long time to grow, and when you step on them it will take them a very, very long time to grow back. While you are at the summit, take time to notice the beautiful, fragile ecosystem surrounding you.

Haikus About Nature

1.

The leaves fall, gently
The wind is soft like feathers
Moisture on the ground

2.

Leaves fly by the glass
Smell of nature hits the nose
Leaves go from green, red

3.

Life passes by fast
Twigs and branches snap and crack
Wind hits the face, cold

4.

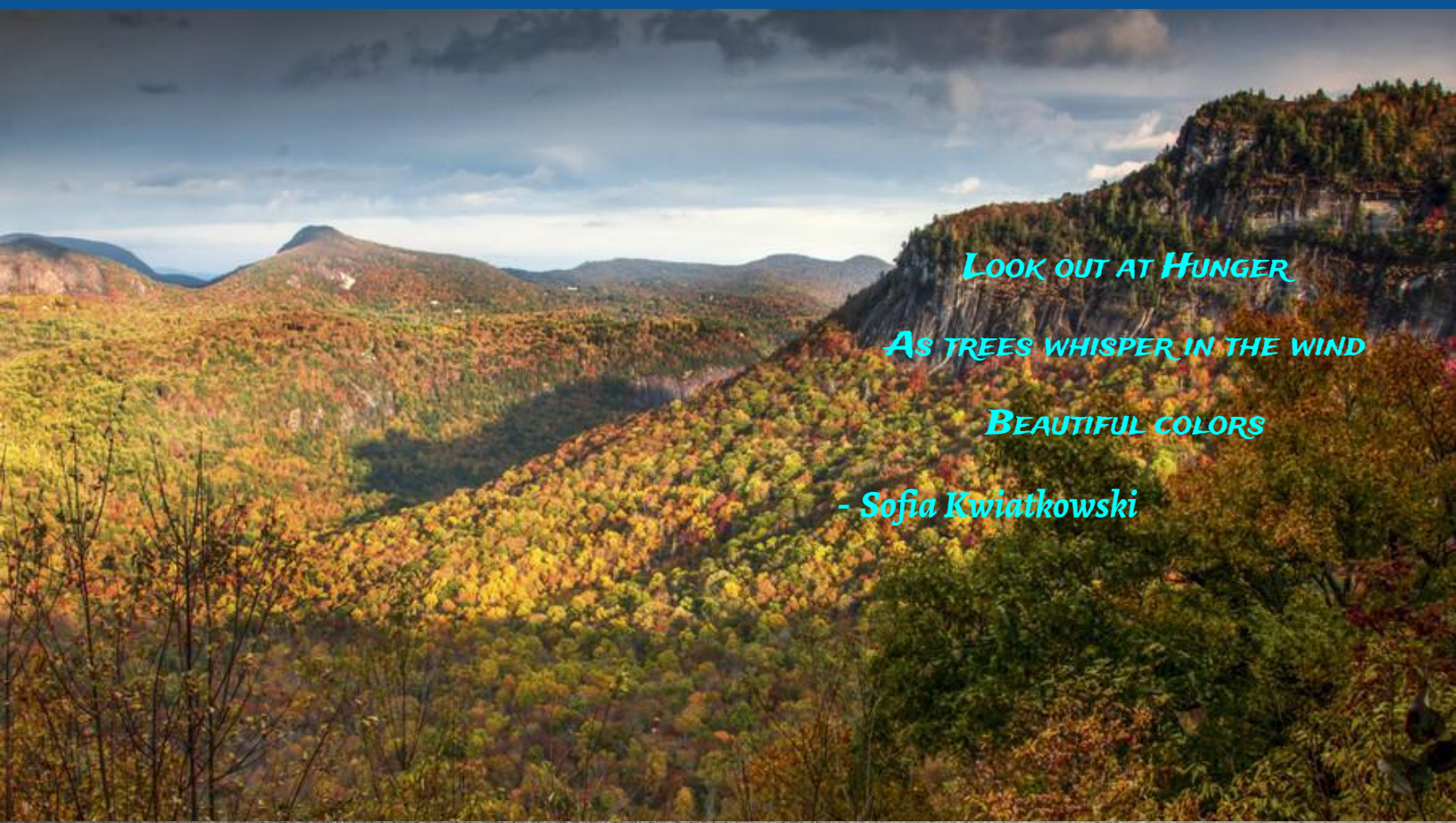
Trees dead and alive, quiet
Sunlight slaps the skin with warmth
Animals walking

This poem
represents the nature
on hunger mountain
and any mountain or
any nature.

This art is of the
nature.

Haikus by : Cole
Art by : Addy

Appreciation

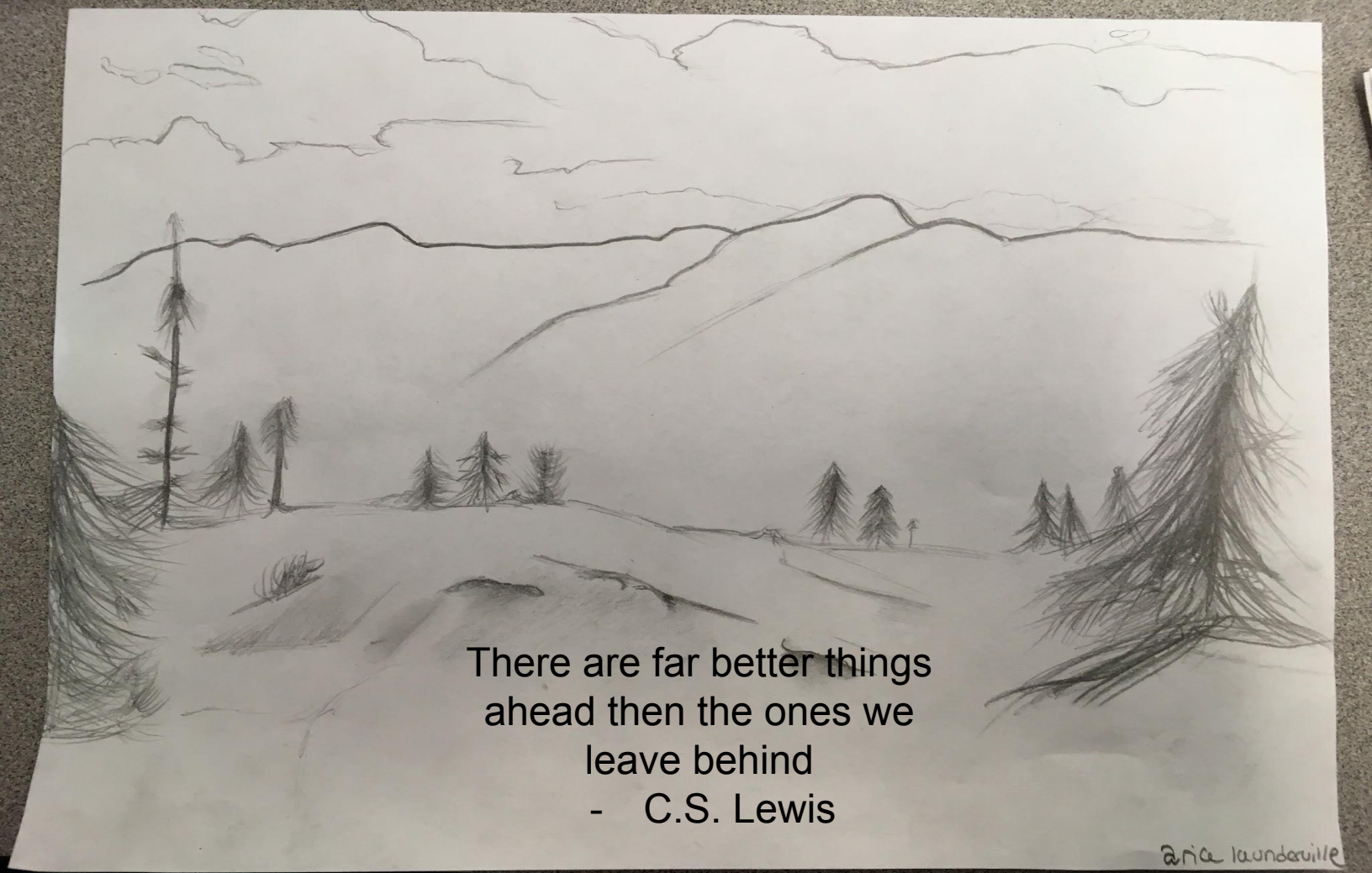


LOOK OUT AT HUNGER

AS TREES WHISPER IN THE WIND

BEAUTIFUL COLORS

- Sofia Kwiatkowski

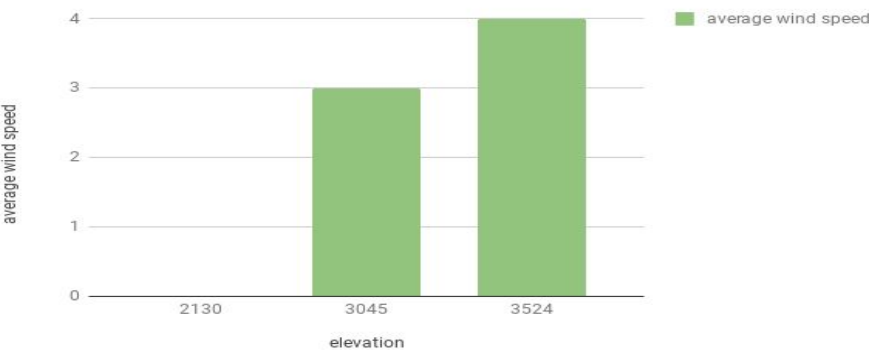


There are far better things
ahead than the ones we
leave behind
- C.S. Lewis

aria launderville

Mount Hunger Data

average wind speed vs. elevation

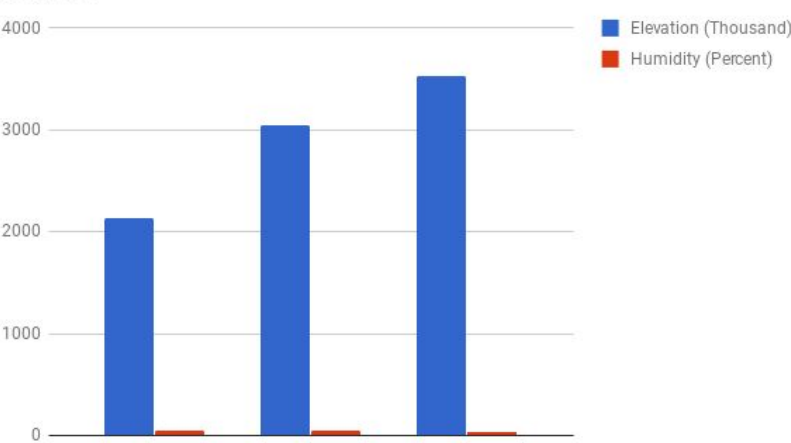


As elevation increases, wind speed drastically increases.

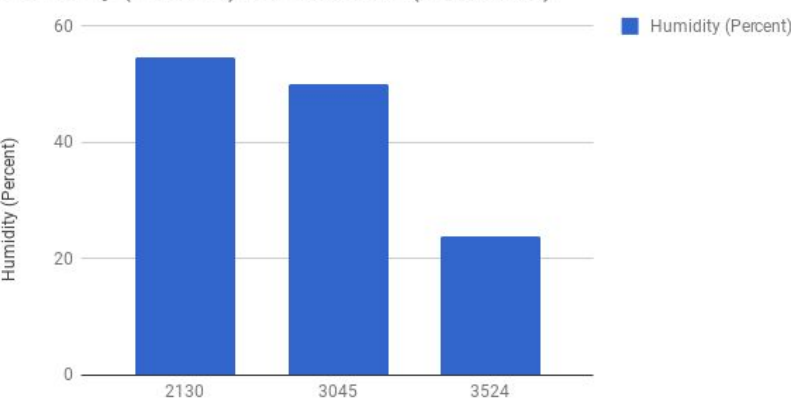
LEAVE NO TRACE



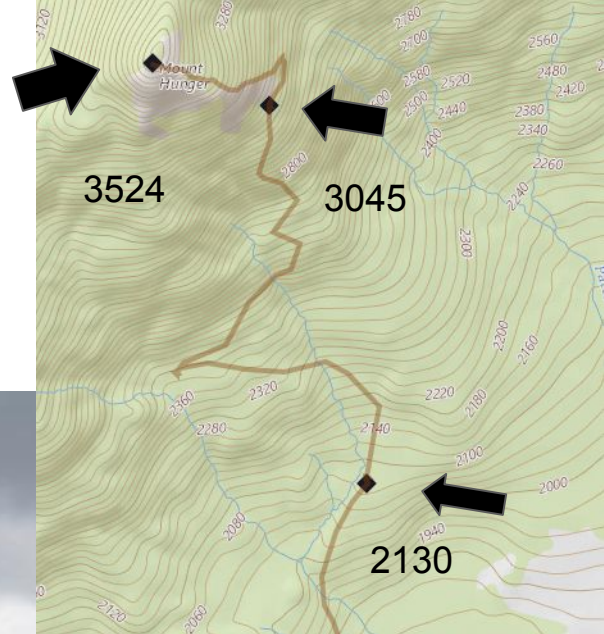
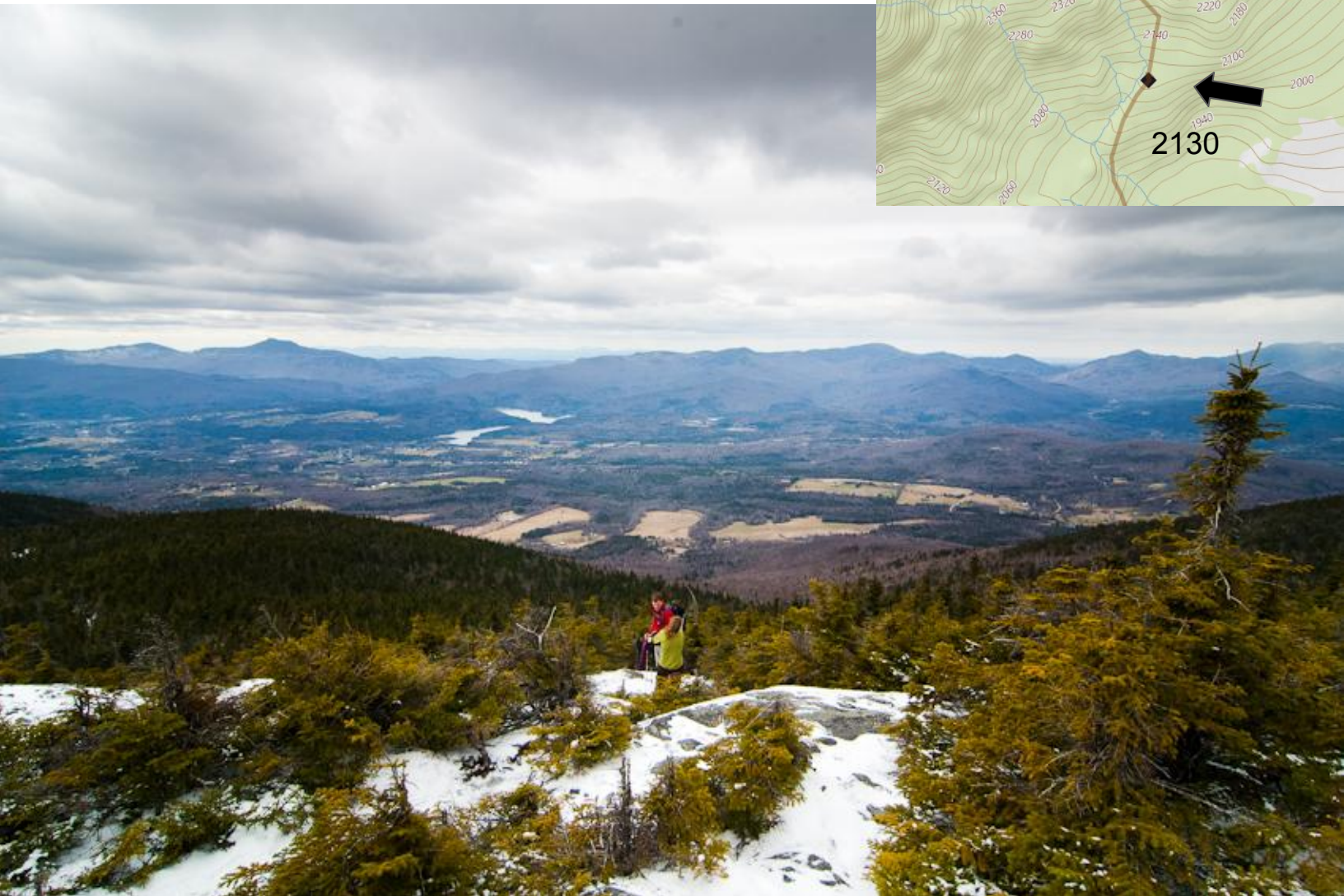
Off trail



Humidity (Percent) vs. Elevation (Thousand)



Visual



“Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop away from you like the leaves of Autumn.” - Unknown

Visual Landscape And Data And Conclusions

The visual landscape of Hunger Mountain changes fastly as you hike. At the bottom it looks like regular old vermont but as you get higher in elevation the trees start to shrink and the ground starts to get more rocky and bare the higher you go in elevation. The summit is predominantly rock and most of the vegetation is endangered and rare. So be careful of the rough landscape and the vegetation on hunger mountain.

These pictures prove my statement of the differences in elevation.



The picture above shows Elevation 2130 on Hunger Mountain

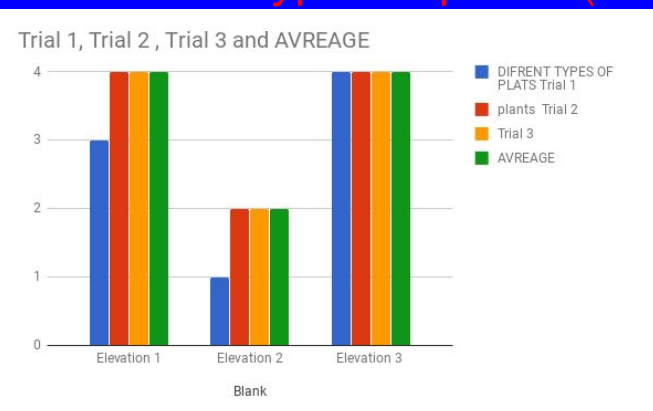


The picture above shows Elevation 3025 on Hunger Mountain



The picture above shows Elevation 3524 on Hunger Mountain

The images below are my test DATA a group member and I did. We surveyed at three different elevations. We did tree circumference and number of types of plants.(check out our graphs for more info)

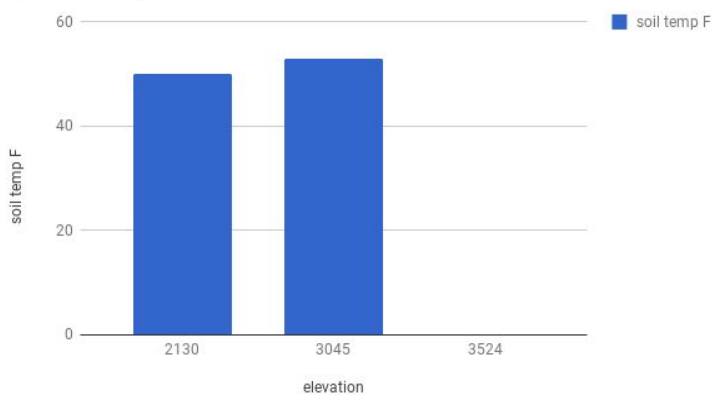


Preserve Hunger Mountain

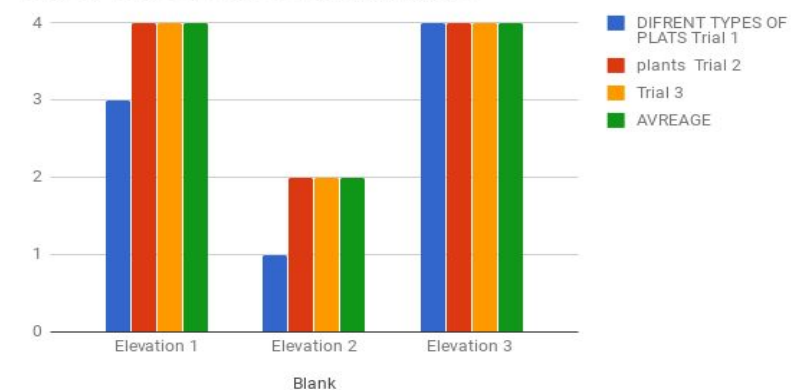
- Try to avoid stepping on any plants or wildlife.
- Stay on the marked trail
- You should not leave any trash or litter behind even if it is not yours.
- We are being stewards of the land by not stepping on any plants.

This graph is showing the soil temperature at three different elevations, 2130ft, 3045ft, 3524ft.

soil temp F vs. elevation

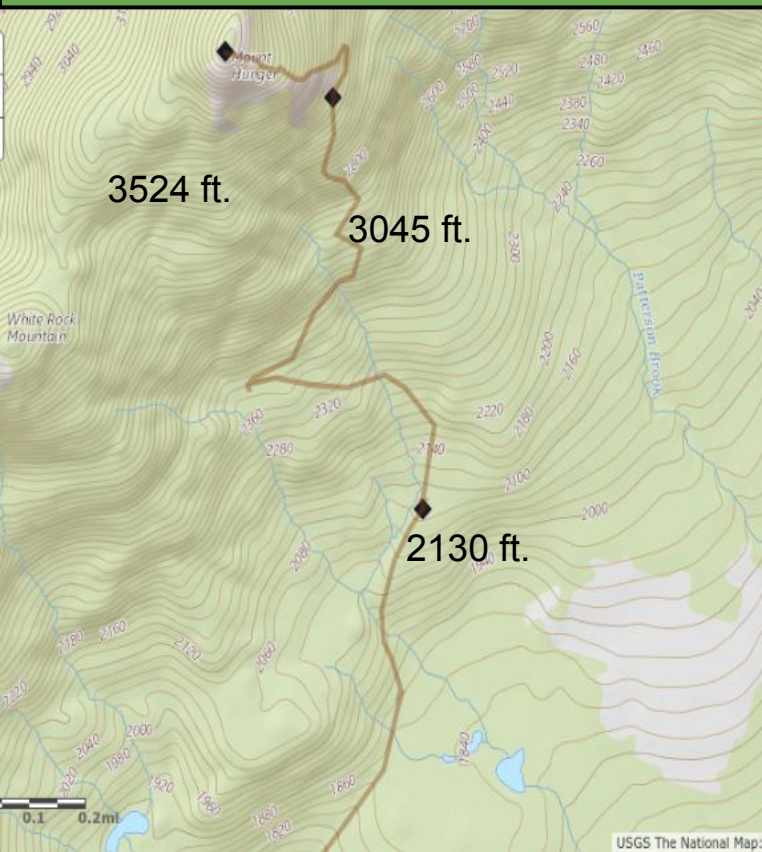


Trial 1, Trial 2, Trial 3 and AVREAGE



Hunger Mountain trail

- = testing stops



Hunger mountain has a gorgeous view at the summit and the trail is not very hard it just gets steep close to the top. Although the trail is very easy to hike at the beginning it can be a little unsafe and dangerous at the top so it's important to stay on the trail and not take a shortcut. As you hike up the trail, it gets narrower, steep, rocky and very close to the edge of the mountain. I recommend to avoid going off the trail and following the blue markers.

Nature appreciation

The gorgeous sights on Hunger Mountain are here now but that could change, we need to take care of the mountain and respect it. Be a steward of the land and keep it healthy and beautiful.

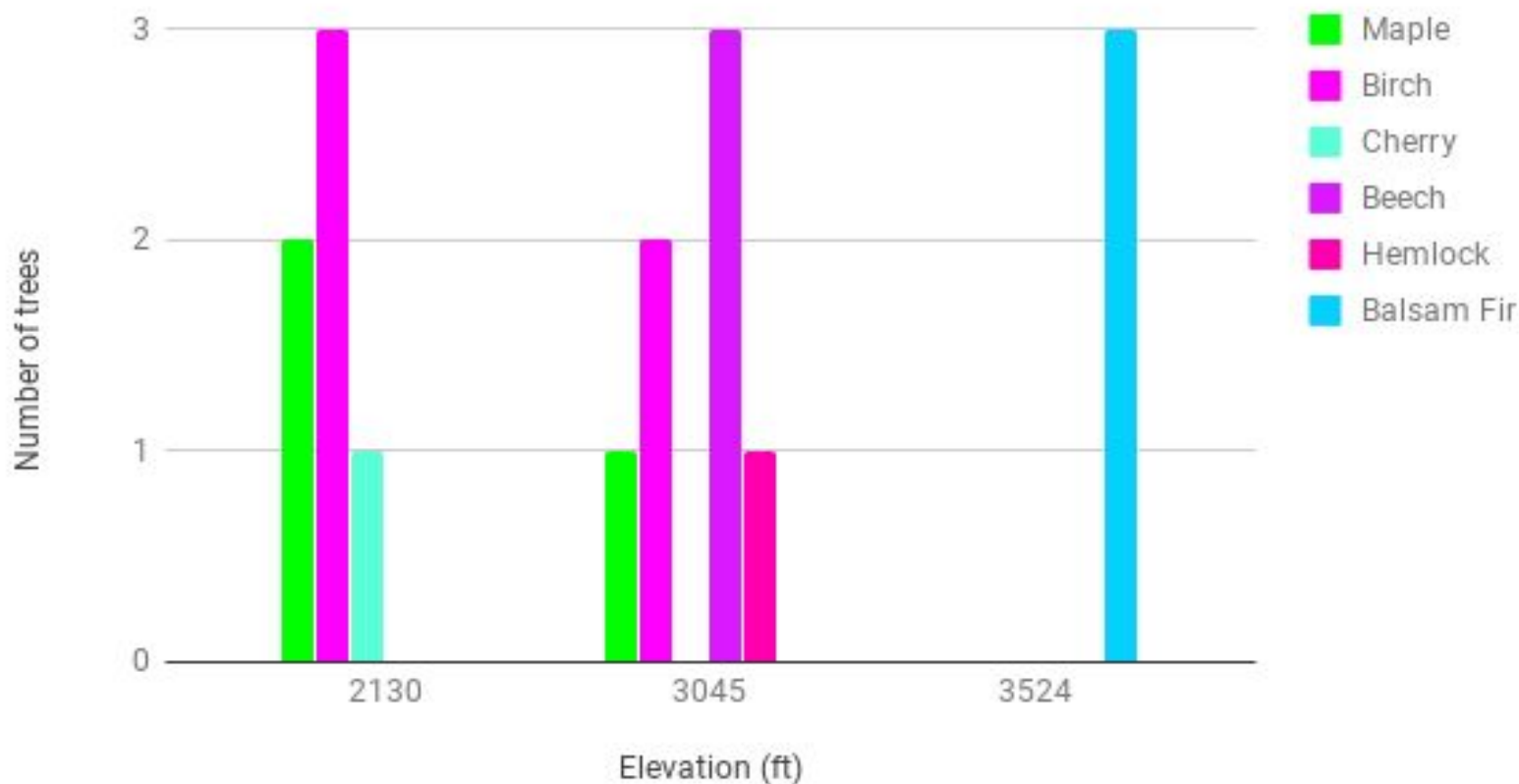
The beautiful view at the summit of Hunger Mountain.



Hunger Mountain is currently being taken care of by stewards of the land, but some people don't know how to do that. A steward of the land is someone who respects the landscape and takes care of it by not harming any abiotic or biotic species. Leave no trace and stay on the trails. If you want to help out and be a steward of the land, all you have to do is leave nothing behind, don't harm plants, stay on the trails and be safe.

You should be a steward of the land because you can help keep the mountain healthy by doing that. Being a steward of the land is important because you could help animals by not throwing your apple core out on the trail or you could help keep the soil where it needs to be by walking on the trail. There is so much you can do to keep Hunger Mountain beautiful, all you have to do is be a steward of the land.

Number of trees vs. Elevation (ft)



The graph above shows that as the the elevation increased the amount of types of trees also increased then went back down.

Error Analysis

I think my data is somewhat reliable. I think this because I did not mark the corer when I took the core sample I did not mark the corer to see where core the ground to get the results of the topsoil.

I did not mark the soil corer the way you are supposed to do to get accurate results.

Also, I did not core the ground at the same elevation at each stop

However, I did do three cores in all the elevations that I did tests at.

I recommend doing the three cores at the same elevation in each test spot to get more reliable results.

Another test that would be cool to do is to do a test on types of rocks.

Nature Appreciation and How to Visualize the Landscape

“Mountains are the cathedrals where I practice my religion.”

Anatoli Boukreev

The loveliest of trees,
The cherry now
Is hung with bloom
Along the bough,
And stands about
The woodland ride
Wearing white for
Eastertide

Poem by: A.E. Housman

Next time you're in the woods look around and imagine what the area could look like in 5, 10, maybe even 100 years imagine that the trees are replaced by skyscrapers, the grass is replaced with concrete, and the fields and lakes are replaced with sewers and houses. That is a possibility of the future, but for now stop take a breath and enjoy the fresh air, sounds, and beauty of the woods.

How to be a steward of the land and be safe on the trail

When you are walking up or down a smooth rock face that is slanting down, always walk on the side that is slanting up because if you fall when you are close to the edge then you could be injured. Try to avoid wet rocks if there are any and if there are go slow so you don't slip. When you are climbing up the rock with the rope try not to lean forward because you could slip and try to walk up the rock as if it were flat.



Don't leave trash or step on any plants because the plant species could be rare and we want them to grow and if you step on them they could die. Also, don't break off twigs of the trees at the very top because the trees are short but they are actually very old.



Where to go and where not to go.



On the summit, you should stay on the rocks near the middle, so you don't step on the endangered plants



When you are hiking on the mountain you want to be stewards of the land, which means you do not go off trail, if you do then do not break branches or step on plants. Also, everything you bring up you should bring it back down with you.



Always stay on the trail and follow the blue markers.

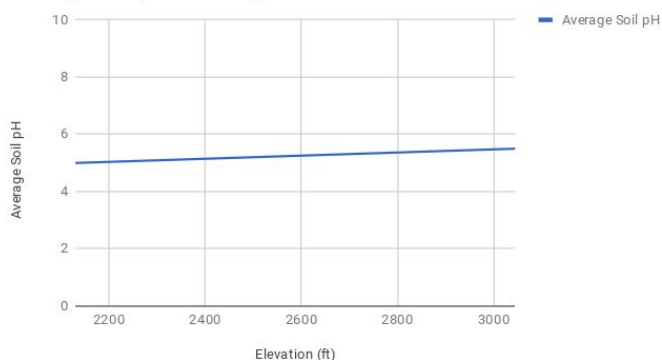


Be stewards of the land.

Soil and Water pH on Hunger Mountain

Data Analysis

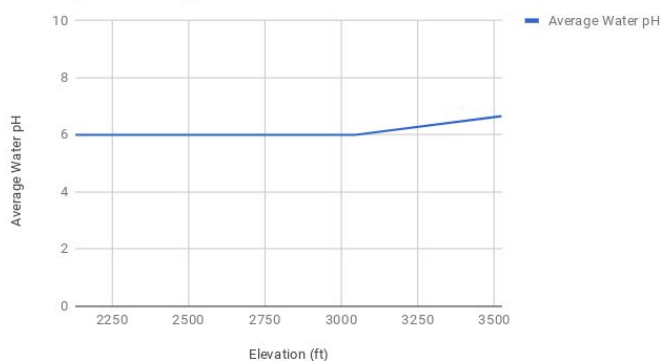
Average Soil pH on Hunger Mountain



The graph shows that the soil pH slowly increases as elevation increases. The soil is more acidic towards the bottom of the mountain.

Claims	Evidence
The pH of the soil decreases (or gets more acidic) as the elevation increases.	At elevation 1, the soil pH is 5.16, whereas at elevation 2, it was 5.00.
The soil pH is almost the same at the two different elevations.	At elevation 1, the soil pH is 5.16, only a .16 difference from the pH at elevation two; 5.00.

Water pH on Hunger Mountain



The graph shows that the water pH stays the same at each elevation until the summit where the water gets less acidic, but not by alot.

Claims=	Evidence
The pH of the water increases (or gets less acidic) as the elevation increases.	At elevation 1, the pH average pH was 6, but at elevation 3, the pH average pH was 6.66.
The pH of the water is almost identical at 3 different elevations.	At elevation 1, the average pH of the water was 6, at elevation 2, the average pH was also 6, then at elevation 3, the water pH was 6.66.

I think my data is reliable. I think this because I did not change my controlled variables for any of my tests. Also, there are no outliers in my data, there were no data points that were abnormally larger or smaller compared to the other data points.

However, I only did tests at three different elevations and for one test I only tested at two elevations, therefore, my data might not be as reliable as data that was collected at 10 different elevations.

I recommend collecting data from more elevations. I recommend this because, if there is a large gap in between numbers of data collected from elevations 1 and 2, we might want to see how that statistic increased or decreased, or even both, between the elevations. If we stop more times to collect data, our data will most likely be more reliable.

In addition, I think we could do more trials for each test. 3 is a good number of trials but for some tests we might want to do more trials incase of an outliers in the data. I wonder if make sure all our tools are working right before we use them, then we might get more accurate data and a lesser chance of outliers in our data.



Photo taken by Daisy Scarzello

Visualize and nature appreciation

Nature Poem

By Peter Cioffi

A light mist clings to the trees and settles down in the open fields in the early morning hours.

Enclosed by a canopy of green leaves, I watch as red, yellow and brown leaves fall to the Earth without power.

The ground is littered with other leaves. Underneath my canopy of leaves, there's a large rock that which I sit upon.

It appears to be the start of a long stone wall through the woods. I follow it with my eyes until its is gone.

There's a humming noise coming from a building. Maybe a machine?

And a gunshot here and there. What could that mean?

People are talking a little ways off. Then a friend nearby has to suddenly cough.

The air is heavy with mist
"Could it be warmer?" is what I have wished.

Everything is damp. The moss, the leaves.

And I am quiet, like the leaves, hidden in the trees.



At Hunger Mountain the trail on the Middlesex side, starts very easy, then gets harder the further you go up. Why it gets harder is because it gets rocky and very steep at the top.